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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/800,138	03/06/2001	Hyae-Ryoung Lee	5649-553DV	7287

20792 7590 10/07/2002

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EXAMINER

BROCK II, PAUL E

ART UNIT PAPER NUMBER

2815

DATE MAILED: 10/07/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/800,138

Applicant(s)

LEE, HYAE-RYOUNG

Examiner

Paul E Brock II

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-41 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 35-41 is/are rejected.
- 7) ☒ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/103,970.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 40 – 41 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. It is not clear where in the originally filed specification where support for “penetrates” can be found. The subject matter of “penetrates” is not defined by the originally filed specification.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 36, 37 and 39 – 41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. With regard to claim 37, it is not clear how “the steps of forming the dielectric layer and forming the conductive pattern are repeatedly and sequentially performed to form a multi-layer

bonding pad on the integrated circuit substrate.” It is not clear if two “the dielectric layers” are formed continuously and sequentially and how this might form a multi-layered pattern, or if one “the dielectric layer” is formed, followed by one “the conductive pattern”, followed by a second “the dielectric layer”, and lastly a second “the conductive pattern.” Any combination of these conductive patterns might be formed also. The steps of forming a multi-layered structure must be further defined. Is more than one “the dielectric layer” sequentially formed? How does the sequence of the dielectric layer formation and the conductive pattern formation coincide with each other?

6. Claim 39 recites the limitations "a dielectric layer" in third line of the claim. There is insufficient antecedent basis for this limitation in the claim. It is not clear if these claims are defining a second dielectric region, or if the claims are referring to the dielectric layer defined by claim 35 and line two of claim 39. For purposes of this office action “a dielectric layer” in claims 39 will be considered “the dielectric layer.”

7. Claim 36 recites the limitations " a conductive pattern" in the second lines of the claim. There is insufficient antecedent basis for this limitation in the claim. It is not clear if these claims are defining a second conductive pattern, or if the claims are referring to the conductive pattern defined by claim 35 and in the beginning of line two of claim 36. For purposes of this office action “a conductive pattern” in claim 36 will be considered “the conductive pattern.”

8. Claim 39 recites the limitations "a conductive pattern" in the sixth line of the claim. There is insufficient antecedent basis for this limitation in the claim. It is not clear if these claims are defining a second conductive pattern, or if the claims are referring to the conductive pattern defined by claim 35 and in line five of claim 39. For purposes of this office action "a conductive pattern" in claim 36 will be considered "the conductive pattern."

9. The term "penetrates" in claims 40 and 41 is a relative term which renders the claim indefinite. The term "penetrates" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. It is not clear if "penetrates" is defining a closed via or conductive pattern in a dielectric layer, or if "penetrates" is attempting to claim a portion of a closed via or conductive pattern outside of the dielectric layer.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

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11. Claims 35 – 41 are rejected under 35 U.S.C. 102(e) as being anticipated by Sato (USPAT 5739587).

With regard to claim 35, Sato discloses in figures 3, 8 and 11, the abstract, lines 3 – 8 and 13 – 15, column 3, lines 31 – 40 and column 6, lines 7 – 12 and 36 – 40 a method of forming bonding pad for an integrated circuit. Sato discloses in figures 3, 8 and 11, the abstract, lines 3 – 8 and 13 – 15, column 3, lines 31 – 40 and column 6, lines 7 – 12 and 36 – 40 forming a dielectric layer (60) having first and second opposing faces on an integrated circuit substrate (10), the dielectric layer including a closed via (102) therein that extends from the first face to the second face and that encloses an inner portion of the dielectric layer, and is enclosed by an outer portion of the dielectric layer. Sato discloses in figures 3, 8 and 11, the abstract, lines 3 – 8 and 13 – 15, column 3, lines 31 – 40 and column 6, lines 7 – 12 and 36 – 40 forming a conductive pattern in the closed via and on the dielectric layer opposite the substrate.

With regard to claim 36, Sato discloses in figures 3, 8 and 11, the abstract, lines 3 – 8 and 13 – 15, column 3, lines 31 – 40 and column 6, lines 7 – 12 and 36 – 40 wherein the step of forming a conductive pattern comprises the step of forming a conductive pattern filling the closed via and on the dielectric layer opposite the substrate.

With regard to claim 37, Sato discloses in figures 3, 8 and 11, the abstract, lines 3 – 8 and 13 – 15, column 3, lines 31 – 40 and column 6, lines 7 – 12 and 36 – 40 wherein the steps of forming a dielectric layer and forming a conductive pattern are repeatedly performed to form a multilayer-bonding pad on the integrated circuit substrate.

With regard to claim 38, Sato discloses in figures 3, 8 and 11, the abstract, lines 3 – 8 and 13 – 15, column 3, lines 31 – 40 and column 6, lines 7 – 12 and 36 – 40 wherein the closed via is of a circular via.

With regard to claim 39, Sato discloses in figures 3, 8 and 11, the abstract, lines 3 – 8 and 13 – 15, column 3, lines 31 – 40 and column 6, lines 7 – 12 and 36 – 40 wherein the step of forming a dielectric layer comprises the step of forming a dielectric layer on an integrated circuit substrate, the dielectric layer including the closed via and an open via therein. Sato discloses in figures 3, 8 and 11, the abstract, lines 3 – 8 and 13 – 15, column 3, lines 31 – 40 and column 6, lines 7 – 12 and 36 – 40 wherein the step of forming a conductive pattern comprises the step of forming a conductive pattern in the closed via, in the open via and on the dielectric layer opposite the substrate.

With regard to claims 40 and 41, as far as the examiner can ascertain Sato reads on the claimed invention similar to claims 35 – 39.

Response to Arguments

12. Applicant's arguments filed August 23, 2002 have been fully considered but they are not persuasive.

13. With regard to the applicant's argument that "...figure 3, 8 and 11 of Sato... show a conductive layer with conductive material formed in grooves therein," nowhere in Sato is conductive material formed within grooves in a conductive layer. It is clear from the disclosure

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of Sato in figures 3, 8 and 11, the abstract, lines 3 – 8 and 13 – 15, column 3, lines 31 – 40 and column 6, lines 7 – 12 and 36 – 40 that conductors 102, 103, and 104 are formed in a dielectric layer. Therefore the rejection is proper.

14. Applicant's citation of column 4, lines 54 – 56 to support the view that Sato discloses "a conductive layer with conductive material formed in grooves therein" is not clearly understood. Column 4, lines 54 – 56 of Sato are not relied upon in the rejection of any pending claims. Further, this citation refers to figures 1 and 2 that clearly do not show what the applicant alleges. Figures 1 and 2 show conductive material 120 – 122 formed in grooves of a dielectric layer 130 disposed between two conductive layers 100 and 110. No grooves are formed in these conductive layers 100 and 110. Therefore, the argument is not persuasive and the rejection is proper.

15. Applicant has failed to provide any arguments against the USC 112 rejections. Therefore the rejections are considered proper and are maintained.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul E Brock II whose telephone number is (703)308-6236. The examiner can normally be reached on 8:30 AM-5:30 PM.


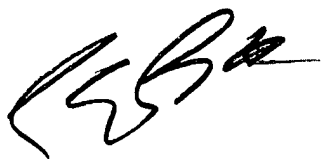
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (703)308-1690. The fax phone numbers for the organization where this application or proceeding is assigned are (703)308-7722 for regular communications and (703)308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.

Paul E Brock II
October 3, 2002



EDDIE LEE
SUPERVISORY PATENT EXAMINER
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